

COOK INLET KING AND TANNER CRAB
INDEX OF ABUNDANCE SURVEY, JUNE 11-29, 1990

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INTRODUCTION

The Department of Fish and Game has been conducting pot index surveys for red king (Paralithodes camtschaticus) and Tanner crabs (Chionoecetes bairdi) in the Cook Inlet Management Area for over 15 years. Surveys in the Southern District (Kachemak Bay) began in 1974 while those in the Kamishak Bay and Barren Islands Districts started in 1975 (Figure 1). These indices were used in part to set harvest guidelines for ensuing commercial seasons.

In 1990 the department initiated a trawl survey in Cook Inlet which was designed to yield an estimate of abundance of catchable crabs as opposed to the index established by the pot survey. A trawl survey also eliminates some of the vagaries associated with a pot index such as the need for accurate, standardized commercial catch data and soaks.

Given the anticipation of improved information generated by a trawl survey, the department did not want to immediately cease extension of the data base established by the pot survey until the trawl survey had been conducted for a period of time necessary to substantiate its accuracy. The pot survey, therefore, was continued in an abbreviated form in 1990. The goals of the survey were:

1. Maintain an index of abundance for both legal and sublegal male king and Tanner crabs.
2. Measure reproductive success as indicated by incidence of egg bearing mature females and relative fecundity.
3. Document distribution by species, sex, size and age.

METHODS

The State research vessel Pandalus was utilized for the survey. The vessel is 66 feet in overall length. The pots used were 700 pound, 7 ft. x 7 ft., commercial king crab pots covered with 3.5 inch stretch mesh. The two tunnel opening dimensions were 35 in. x 8 inches. The pots were baited with two 2 quart jars three quarters filled with chopped herring. Thawing time for the bait was kept consistent. A 24 hour period was the initial soak time goal.

Selection of survey stations was systematically based both on stations that had a history of king and Tanner crab capture, as well as crab concentrations reported from commercial fisheries. Stations in the Southern (bay stations) and Kamishak/Barren Islands (ocean stations) Districts were one and 25 square nautical miles,

respectively. In the Kamishak/Barren Islands Districts six pots were equally spaced over 1.5 nautical mile strings. In the Southern District four pots were equally spaced over 1.0 nautical mile strings. Some three pot strings were utilized in the Southern District. A Loran C and video plotter were used to record pot and station information for future reference and replication.

Once each pot was pulled, the entire catch, crabs and fish, was dumped into totes. King and Tanner crabs were separated by species only. All male crabs and all female king crabs were measured to the nearest millimeter (mm) of carapace length (king crabs) or width (Tanner crabs), and shell aged. Relative fecundity of all king crab females was determined. Only the first 25 Tanner females handled were measured, aged and assessed for relative fecundity. The remaining female Tanners were counted only.

Incidence of black mat syndrome, affecting Tanner crabs and caused by the fungus Trichomarix invadens, was recorded.

All halibut (Hippoglossus stenolepis) were counted and returned immediately to the water. All Pacific cod (Gadus macrocephalus) were counted. Periodic sampling of cod stomachs was done to ascertain presence of shrimp or crabs. Other fish were identified to a common family name only and returned to the sea.

RESULTS

Kamishak Bay and Barren Islands Districts

The survey was conducted from June 11 - 18, 1990. A total of 99 pots were lifted from 17 stations. One pot was lost. Fishing depths ranged from 13 to 69 fathoms with an average of 31 fathoms. Soak times ranged between 0.55 and 1.75 days. The average soak was 0.96 days (Table 1).

King crab

Three hundred fifty six legal and 118 sublegal male king crabs were caught (Table 2). Only two males in the 73 and 91 mm sublegal size classes were captured. The 109 and 127 mm size classes accounted for 10 percent (48) and 14 percent (68) of the male catch, respectively.

Legal males, those crabs larger than 145 mm (7 in. width), comprised 75 percent (356) of the total male catch. The 145 mm size class constituted 61 percent of the legal catch and 46 percent of the total male catch. Males larger than 164 mm (8 in. width) made up 39 percent (139) of the legal male catch and 30 percent of the total catch (Figure 2).

Post recruits comprised 70 percent (250) of the legal male catch and 53% of the total male catch. Post recruits are both skipmolt males between 145 and 164 mm (7 and 8 in. width) plus all males greater than 164 mm. Skipmolts are old and very old shell males that failed to molt the last time members of their cohort molted. Recruits constituted 22 percent of the total male catch. Prerecruit ones made up 51 percent (68) of the sublegal catch but only 14 percent of the total male catch (Figure 3 and Appendix A).

There were no legal males caught in two of the 17 stations fished. The range for the remaining 15 stations was 0.3 to 27.0 legal crabs per pot. The 27.0 per pot catch, 135 crabs out of five pots, came from a station approximately 7 miles east southeast of Augustine Island in a depth range of 29 to 31 fathoms (Figure 4).

No sublegal males were caught in six of the 17 stations. The range for the remaining 11 stations was 0.2 to 7.7 sublegals per pot. Average catches of 7.2 and 7.7 crabs per pots came from two stations approximately 7 miles east and east northeast of Augustine Island (Figure 5).

One hundred and thirty five females were captured. Adults and juveniles numbered 129 and 6, respectively. All mature females were new shell. None were barren, while 22 had full clutches. The average clutch was 69 % full (Table 3).

Tanner crab

The Tanner crab catch was 782 legal and 2,630 sublegal male crabs (Table 4). The minimum legal size is 140 mm (5.5 in.) carapace width. The average catch of legals was 7.9 per pot. The average of true recruits was 1.0 per pot. The average size of the legal males was 145.8 mm (5.74 inches).

Most evident was the preponderance of both legal and sublegal skipmolt males. Skipmolts in the recruit size class (140 - 165 mm) comprised 88 percent (685) of the legal males captured. Skipmolts made up 94 percent (2162) of the prerecruit ones (115 - 139 mm) captured. Moreover, skipmolts constituted 92 percent of all the sublegals caught (Figure 6).

Legal males were caught in 16 of the 17 stations fished. The highest average catch per pot of legals was 38.2 which came from a station approximately 12 miles southeast of Augustine Island. The bulk (81 %) of the legal crabs were found in four stations in this same general area while the remaining 13 stations provided only 19 percent of the legal catch (Figure 7).

Three hundred twelve (93 %) of the 334 females caught were sampled. All of the sampled females were adults. Only 7 (2 %) were new shells. Seventy percent (217) had full clutches while five percent

(16) were barren. All barren females were very old shell. The average clutch was 84 percent full (Table 5).

Sixty nine of the males were in a soft shell condition while only one female was soft. Soft shells accounted for 23 percent of the new shell male catch.

Black mat was observed on 14 males and six females. All Tanner crabs exhibiting black mat were skipmolts.

Incidental catches of halibut and Pacific cod were 167 and 471, respectively.

Southern District

The survey was conducted from June 25 - 29, 1990. A total of 68 pots were lifted from 17 stations. No pots were lost. Fishing depths ranged from 14 to 85 fathoms with an average of 40 fathoms. Soak times ranged between 0.88 and 1.00 days. The average soak was 0.92 days (Table 6).

King crab

Three hundred twenty nine legal and 19 sublegal male king crabs were caught (Table 7). No males beneath the 127 mm carapace length size class were captured. The entire sublegal catch was composed of 19 males (5 %) in the 127 mm size class.

The remaining 95 percent of the males were legal size or greater. Fifty seven percent (197) were in the 145 mm (7 in. width) size class, 32 percent (113) were in the 164 mm (8 in. width) size class and the remaining five percent (19) were between 184 and 204 mm (Figure 8).

Post recruits comprised 42 percent of the total male catch while true recruits made up 52 percent. The remaining five percent were prerecruit ones (Figure 9).

A single station approximately 2.0 miles north northeast of Barabara Point provided 293 of the 329 (89 %) legal males and 16 of the 19 sublegal males caught. The average catch for the three pots fished in this station was 96.8 (Figure 10). No male or female king crabs were caught in 10 of the 20 stations fished.

Ten females were captured. Nine were adults and one was a juvenile. The nine adults were all bearing eggs. The average clutch size was 69 percent full.

Tanner crab

The Tanner crab catch was 1,676 legal and 486 sublegal males (Table 8). The average catch of legal males was 24.7 crabs per pot. The average catch of true recruits was 4.0 crabs per pot. The average of true prerecruit males was 3.0 crab per pot. The average size of the legal males was 156.3 mm (6.15 inches).

The legal segment of the male Tanner catch was dominated by skipmolts (82 %). The preponderance of skipmolts is a function of both poor recruitment in 1990 and a buildup of older crabs due to the lack of a commercial harvest for three adult molt cycles. The skipmolt percentage diminished to 51 percent for sublegals (Figure 11).

Legal males were caught in 15 of the 20 stations fished. The largest average catch (94.3/pot) came from a station approximately 3.0 miles east northeast of Homer Spit. The highest catch west of Homer Spit (85.8/pot) came from a station approximately 5.0 north northwest of Seldovia (Figure 12).

Three hundred three (89 %) of the 342 females caught were sampled. Six (2 %) of the females were juveniles. Seventeen (6 %), including the juveniles, were new shells. Full clutches were found on 67 percent of the adults while 10 percent were barren. All barren females were very old shells. The average clutch was 78 percent full.

Nine of the males were in a soft shell condition while none of the females were soft. Soft shells comprised two percent of the new shell male catch.

None of the Tanner crabs captured showed any evidence of black mat.

Incidental catches of halibut and pacific cod were 87 and 164, respectively.

DISCUSSION

Kamishak Bay and Barren Islands Districts

King crab

The anticipated recovery of the king crab stock in the Kamishak and Barren Islands Districts does not appear to be materializing at a meaningful rate. Although the number of legal crabs captured during the recent surveys increased from the levels of the mid 1980's, it appears that the buildup is due mainly to an accumulation of post recruits that have not been removed by a fishery as opposed to an increase in crabs due to improved

recruitment. Comparing the size distribution to the age distribution shows that 51 percent of the legal crabs in the recruit size class (Figure 2) were skipmolts, therefore classified as post recruits. Overall post recruits account for 70 percent of the legal male catch (Figure 3).

Further evidence of a lack of significant recovery is the reduction in catch of sublegal males and females in the past few years. Although the meaningful difference between the recent relatively low numbers might be argued statistically, the fact remains that all of these numbers are well below the large catches of females and sublegals in the 1970's (Table 2).

The distribution of the king crabs covers a significant number of the 25 square mile stations (Figure 4). In a comparative sense this is somewhat impressive when contrasted to that of the Southern District (Figure 10). Although the overall numbers of crabs in the Kamishak and Barren Islands Districts may not be increasing at a meaningful rate, the animals have been detected over a relatively large area.

Tanner crab

Continued skipmolting in the prerecruit one and recruit size classes still plagues the male segment of the Tanner crab stock in the Kamishak and Barren Islands Districts. Crabs are lost to the commercial fishery when they repeatedly fail to molt from the prerecruit one size class into the recruit size class. In addition, virtually no crabs molt from the recruit size class to the post recruit size class (165 mm or 6.5 in.) (Figure 6). This results in an average size of the legal crabs in the Kamishak and Barren Islands Districts of 145.8 mm (5.74 inches). This is a full 10.5 mm (0.41 inches) beneath that of the Southern District (156.3 mm - 6.15 inches). In the commercial fishery this size difference equates to an average weight difference of 0.46 pounds per crab, that is, the average weight in the Southern District is 2.55 pounds per crab versus 2.10 pounds per crab in the Kamishak and Barren Islands Districts.

Southern District

King crab

Review of these catch data for both king and Tanner crabs must be prefaced by consideration of the bias introduced into the results by systematically selecting stations that have historically exhibited larger catches of both king and Tanner crabs, and eliminating those stations that have not. Indices in 1990 therefore should be higher than those of the recent past.

The Southern District king crab stock remains in a depressed condition. The seemingly large catch of legal males (329) is qualified by the fact that the overwhelming majority (89 %) came from a single one square mile station. The total catch of 36 legals in the remaining 19 stations yielded an average catch per pot of 0.5 crabs. Meaningful survey catches of king crabs historically extended the length of Kachemak Bay from Point Pogibshi to Glacier Spit (Figure 13). Further evidence of the depressed condition of the king crab stocks is illustrated by the historical low catch of females (10) and sublegal males (19) (Table 7).

Tanner crab

The Tanner crab catch showed the expected buildup of legal males. This was a direct result of no fishing mortality since 1988. The majority (82 %) of the legal segment of the stock were post-recruits; thus indicating continued poor recruitment in 1990 (Figure 11).

Table 1. Station descriptive data, Kamishak/Barren Islands
Districts, king and Tanner crab index, June 11-18, 1990.

Station Number	Number of pots fished	Depth range (fms)	Soak (days)	Number of Pacific Cod	Number of halibut
3-54	6	38-58	0.74	15	4
3-55	5	16	0.55	65	10
4-53	6	20-25	0.83	16	14
5-56	6	23-24	0.96	37	18
5-57	6	17-19	1.75	15	17
5-58	6	13-14	0.83	31	19
6-55	5	29-31	0.73	8	3
6-56	6	24-25	0.99	20	3
6-57	6	21-22	1.06	22	11
6-58	6	18	0.92	30	14
7-54	6	48-60	1.00	24	7
7-55	5	36-43	0.96	11	1
7-56	6	30-33	0.83	27	9
7-57	6	24-26	0.96	44	12
8-54	6	66-69	0.96	10	5
8-56	6	39-41	0.85	42	13
8-57	6	32-36	0.94	54	7

Total stations = 17
 Total pots = 99
 Depth range = 13-69 (avg. 31) fms)
 Soak range = 0.55-1.75 (0.96) days
 Total Pacific cod = 471 (4.8/pot avg.)
 Total halibut = 167 (1.7/pot avg.)

Table 2. Total catch of king crabs from Kamishak District index of abundance surveys, 1975-1990.

Year	Survey Dates	Pots Pulled	No. Females	Number Sublegal Males	Number Legal Males	Average Legal Males per Pot ^a	Commercial Harvest lbs.
1975	6/02-11	96	Not	1,529	2,593	27.0	1,832,484
1976	6/29-7/23	159	Available	1,301	768	4.8	3,103,865
1977	7/08-23	199	7,488	4,326	698	3.5	1,099,279
1978	6/29-7/20	224	8,164	7,774	883	3.9	480,261
1979	7/08-27	261	6,123	7,553	1,109	4.2	489,365
1980	6/06-16	171	920	1,098	602	3.5	1,635,922
1981	6/23-7/07	173	1,337	1,191	1,202	7.2	1,371,821
1982	6/24-7/04	70	357	504	296	4.2	807,079
1983	6/15-25	192	407	250	150	0.8	188,027
^b 1984	6/22-7/02	185	315	206	73	0.4	Closed
1985	6/17-27	182	247	100	314 ^b	1.7	Closed
1986	6/10-19	184	565	444	51	0.3	Closed
1987	6/16-25	108	1,169 ^b	1,374 ^b	429 ^b	4.0 ^b	Closed
1988	6/14-22	168	172	226	259	1.5	Closed
1989	6/07-15	126	436	330	487	3.9	Closed
1990	6/11-18	99	135	118	356	3.6	Closed

^a Unstandardized soak times.

^b Relatively high catches were in a large part due to 2 to 4 day soaks on the gear which caught most of the crabs.

Table 3. Relative fecundity by shell age of mature female king crabs from the June 1990 Kamishak District index of abundance survey.

Percent Full ^a	Number of crabs			Total Number (%)
	New Shell	Old Shell	Very Old Shell	
0	0	0	0	0 (0)
25	5	0	0	5 (4)
50	41	0	0	41 (32)
75	61	0	0	61 (47)
100	22	0	0	22 (17)
Total	129	0	0	129 (100)

^a Percent full = relative fecundity.

Average relative fecundity = 69%.

Table 4. Total catch of Tanner crabs from the Kamishak District index of abundance surveys, 1975 - 1990.

Year	Survey Dates	Pots Pulled	Number Females	Number Sublegal Males	Number Legal Males	Average Legal Males per Pot ^a	Commercial Harvest (lbs.) ^b
1975	6/02-11	96	Data		2,666	27.8	3,281,084
1976	6/29-7/23	159	Unavailable		1,537	7.7	1,765,926
1977	7/08-23	199	1,867	7,553	1,547	7.8	2,077,092
1978	6/29-7/20	224	1,672	13,926	3,309	14.8	2,713,339
1979	7/08-27	261	2,004	7,826	3,044	11.7	3,338,623
1980	6/06-16	171	711	6,187	1,470	8.6	1,757,331
1981	6/23-7/07	173	871	5,738	857	5.0	1,286,332
1982	6/24-7/05	70	37	1,098	238	3.4	1,693,794
1983	6/15-25	192	358	3,160	359	1.9	1,373,674
1984	6/22-7/02	185	196	2,429	771	4.2	1,535,547
1985	6/17-27	182	574	3,662	781	4.3	1,288,711
1986	6/10-19	184	1,226	6,709	1,290	7.0	1,111,300
1987	6/16-25	108	691	3,372	210	1.9	417,182
1988	6/14-22	168	664	5,419	766	4.6	Closed
1989	6/07-15	126	607	4,923	1,001	7.9	510,034
1990	6/11-18	99	334	2,630	782	7.9	

^a Unstandardized soak times.

^b Subsequent season.

Table 5. Relative fecundity by shell age of mature female Tanner crab from the June 1990 Kamishak District index of abundance survey.

Percent Full ^a	Number of Crabs					
	New Shell No.	Shell (%) ^b	Old Shell No.	Shell (%)	Very Old Shell No.	Total No. (%)
0	0		0		16 (5)	16 (5)
25	1	(<1)	0		18 (6)	19 (6)
50	1	(<1)	0		18 (6)	19 (6)
75	1	(<1)	0		40 (13)	41 (13)
100	4	(1)	29 (9)		184 (59)	217 (70)
Total	7	(2)	29 (9)		276 (88)	312 (100)

^a Percent full = relative fecundity.

^b % = percent of the total number of females captured from all shell age classes.

Average relative fecundity = 84%.

Table 6. Station descriptive data, Southern District king and Tanner crab index, June 25-29, 1990.

Station number	Number of pots fished	Depth range (fms)	Soak (days)	Number of Pacific cod	Number of halibut
F-4	3	37-44	0.92	9	5
G-5	3	35-38	0.92	6	21
H-10	4	38-51	0.92	12	6
H-12	4	39-49	0.92	8	5
I-11	3	56-58	0.96	2	0
I-7	4	40-46	0.96	9	2
J-8	4	37-38	0.95	11	1
K-15	3	82-85	1.00	1	2
K-5	3	24-26	0.92	18	6
K-9	3	39-42	0.92	15	3
L-12	3	40-42	1.00	1	3
L-18	4	75-77	0.92	1	2
L-6	3	19-20	0.92	5	8
N-20	3	36-39	0.90	3	2
O-21	4	33-36	0.89	5	2
O-23	4	36-40	1.00	9	4
P-20	3	14-16	0.92	6	3
R-24	3	25-29	0.88	6	1
S-25	4	24-25	0.90	21	9
U-27	3	28-31	0.92	16	2

Total stations = 20
 Total pots = 68
 Depth range = 14-85 (avg. 40) fms
 Soak range = 0.88 - 1.00 (avg. 0.92) days
 Total Pacific cod = 164 (2.4/pot avg.)
 Total halibut = 87 (1.3/pot avg.)

Table 7. Total catch of king crabs from the Southern District index of abundance surveys, 1974-1990.

Year	Survey Dates	Pots Pulled	Number Females	Number Sublegal Males	Number Legal Males	Average Legal Males per Pot ^a	Avg. wt. (lbs.) ^b	Commercial Harvest (no.)	Commercial Harvest (lbs.)
1974	6/13-27	240	--	494	275	1.2	7.5	242,202	1,816,512
1975	5/20-31	260	432	552	573	2.2	8.3	201,759	1,674,872
1976	6/07-19	227	981	977	225	0.9	8.2	126,258	1,035,316
1977	6/10-21	260	12,075	9,772	281	1.1	7.1	82,266	584,090
1978	6/14-21	237	2,944	5,501	807	3.4	6.6	100,665	664,338
1979	5/31-6/07	255	2,555	2,853	665	2.4	6.8	125,527	853,584
1980 ^c	7/08-25	367	14,855	10,041	1,941	5.3	6.8	74,804	508,670
1981	7/10-19	238	2,711	2,130	519	2.2	7.1	25,901	183,899
1982	7/08-19	222	1,889	608	95	0.4	--	Closed	Closed
1983	6/28-7/15	230	696	447	123	0.5	--	Closed	Closed
1984	7/09-26	234	2,100	777	418	1.8	--	Closed	Closed
1985	7/08-18	231	941	337	273	1.2	--	Closed	Closed
1986	7/08-18	237	480	365	210	0.9	--	Closed	Closed
1987	7/14-24	237	137	188	252	1.1	--	Closed	Closed
1988	7/05-15	228	294	336	184	0.8	--	Closed	Closed
1989	7/05-14	212	62	78	105	0.5	--	Closed	Closed
1990 ^d	6/25-29	68	10	19	329	4.8	--	Closed	Closed

^a Unstandardized soak times.

^b Average weight of legal males taken from commercial dockside data.

^c Sample stations were increased in areas containing legal size king crab, 1980 index catch per pot is not comparable to previous year's values.

^d Station systematically selected based on significant historical crab catch.

Table 8. Total catch of Tanner crabs from the Southern District index of abundance surveys, 1974-1990.

Year	Survey Dates	Pots Pulled	Number Females	Number Sublegal Males	Number Legal Males	Average Legal Males per Pot ^a	Average Weight (lbs.) ^b	Commercial Harvest (no.)	Commercial harvest (lbs.)
1974	6/13-27	240	785	--	3,889	16.2	2.85	339,565	967,762
1975	5/20-31	260	1,840	--	5,093	19.6	2.65	505,375	1,339,245
1976	6/7-19	227	1,757	--	5,014	22.1	2.79	722,760	2,016,501
1977	6/10-21	260	3,937	--	10,352	39.8	2.65	1,043,488	2,765,243
1978	6/14-21	237	2,617	--	8,508	35.9	2.64	880,083	2,323,420
1979	5/31-6/7	255	3,075	1,929	3,721	14.6	2.60	436,515	1,134,940
1980	7/8-25	219	1,455	7,995	4,525	20.7	2.75	380,975	1,047,680
1981	7/10-19	238	1,719	3,088	4,012	16.9	2.50	219,411	548,579
1982	7/8-19	222	2,772	3,749	3,628	16.3	2.47	236,805	584,908
1983	6/28-7/15	230	2,195	3,130	5,087	22.1	2.51	397,116	996,763
1984	7/9-26	234	1,911	3,333	5,838	24.9	2.49	493,694	1,229,298
1985	7/8-18	231	3,540	7,445	8,171	35.4	2.30	506,200	1,164,261
1986	7/8-18	237	2,886	4,497	4,822	20.3	2.31	468,435	1,077,400
1987	7/14-24	237	3,097	2,753	5,649	23.8	2.46	384,050	944,763
1988	7/5-15	228	2,333	1,303	2,591	11.4	--	Closed	Closed
1989	7/5-14	212	1,563	757	2,533	11.9	--	Closed	Closed
1990 ^c	6/25-29	68	303	486	1,676	24.2			

^a Unstandardized soak times.

^b Average weight of legal males taken from commercial dockside data.

^c Stations systematically selected based on significant historical crab catch.

Table 9. Relative fecundity by shell age of mature female Tanner crab from the June 1990 Southern District index of abundance survey.

Percent Full ^a	Number of Crabs					
	New Shell No. (%) ^b	Old Shell No. (%)	Very Old Shell No. (%)		Total No. (%)	
0	0	0	31	(10)	31	(10)
25	0	0	25	(8)	25	(8)
50	0	0	19	(6)	19	(6)
75	0	1 (<1)	22	(7)	23	(8)
100	11 (4)	34 (11)	154	(52)	199	(67)
Total	11 (4)	35 (11)	251	(85)	297	(100)

^a Percent full = relative fecundity.

^b % = percent of the total number of females captured from all shell age classes.

Average relative fecundity = 78%.

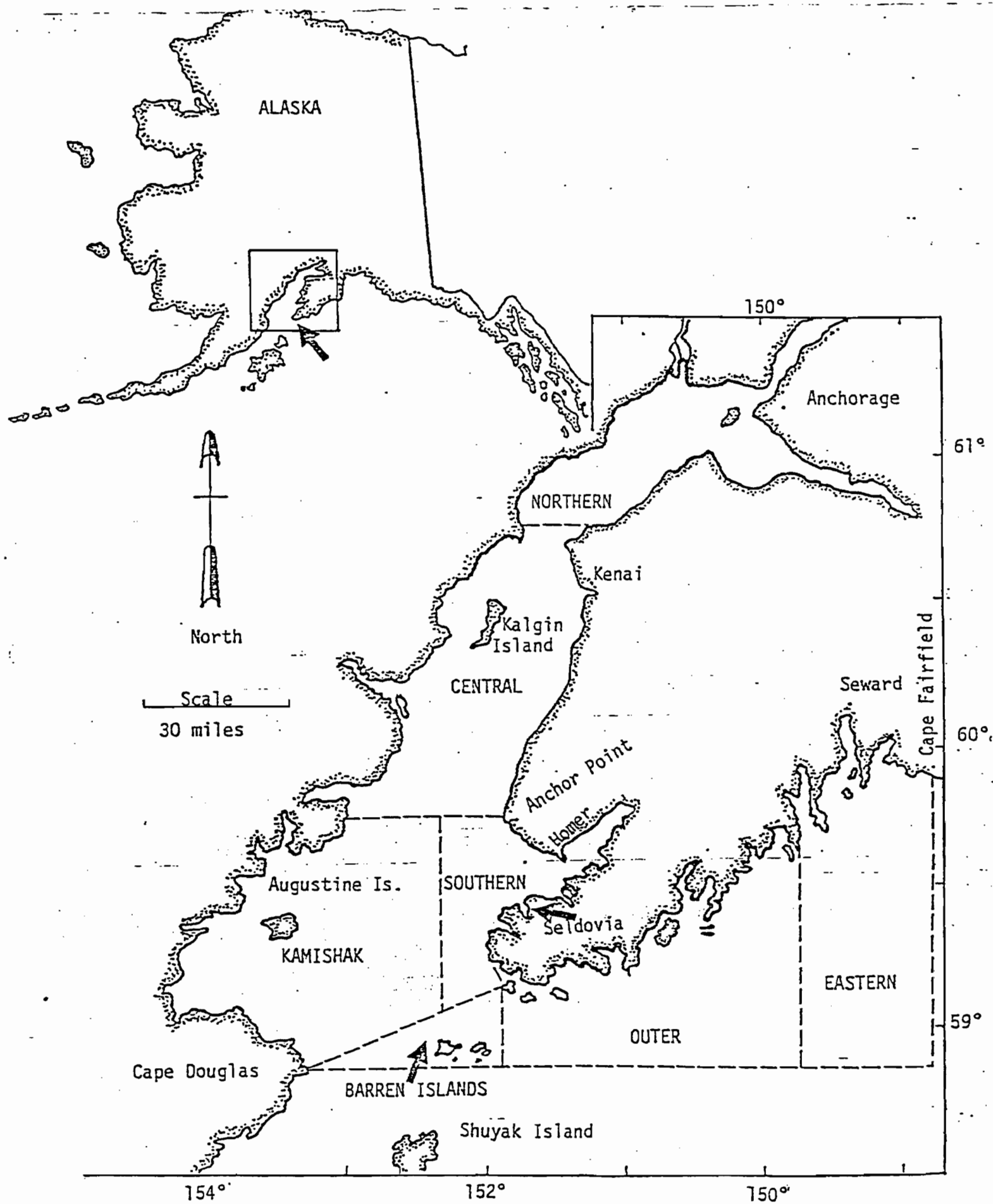


Figure 1 Cook Inlet area district location chart.

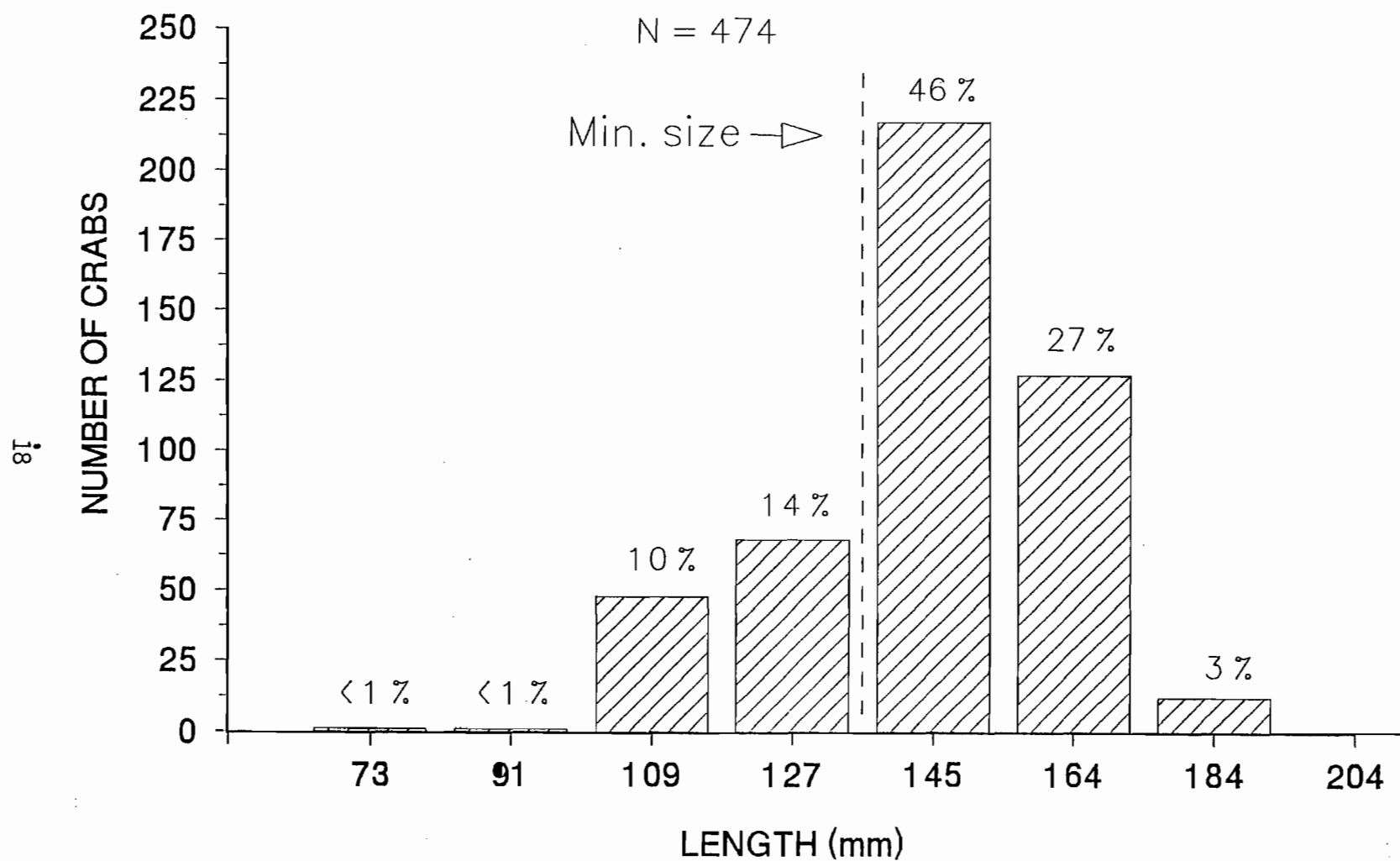


Figure 2. Male king crab catch by size class, Kamishak Distr. index, June 1990.

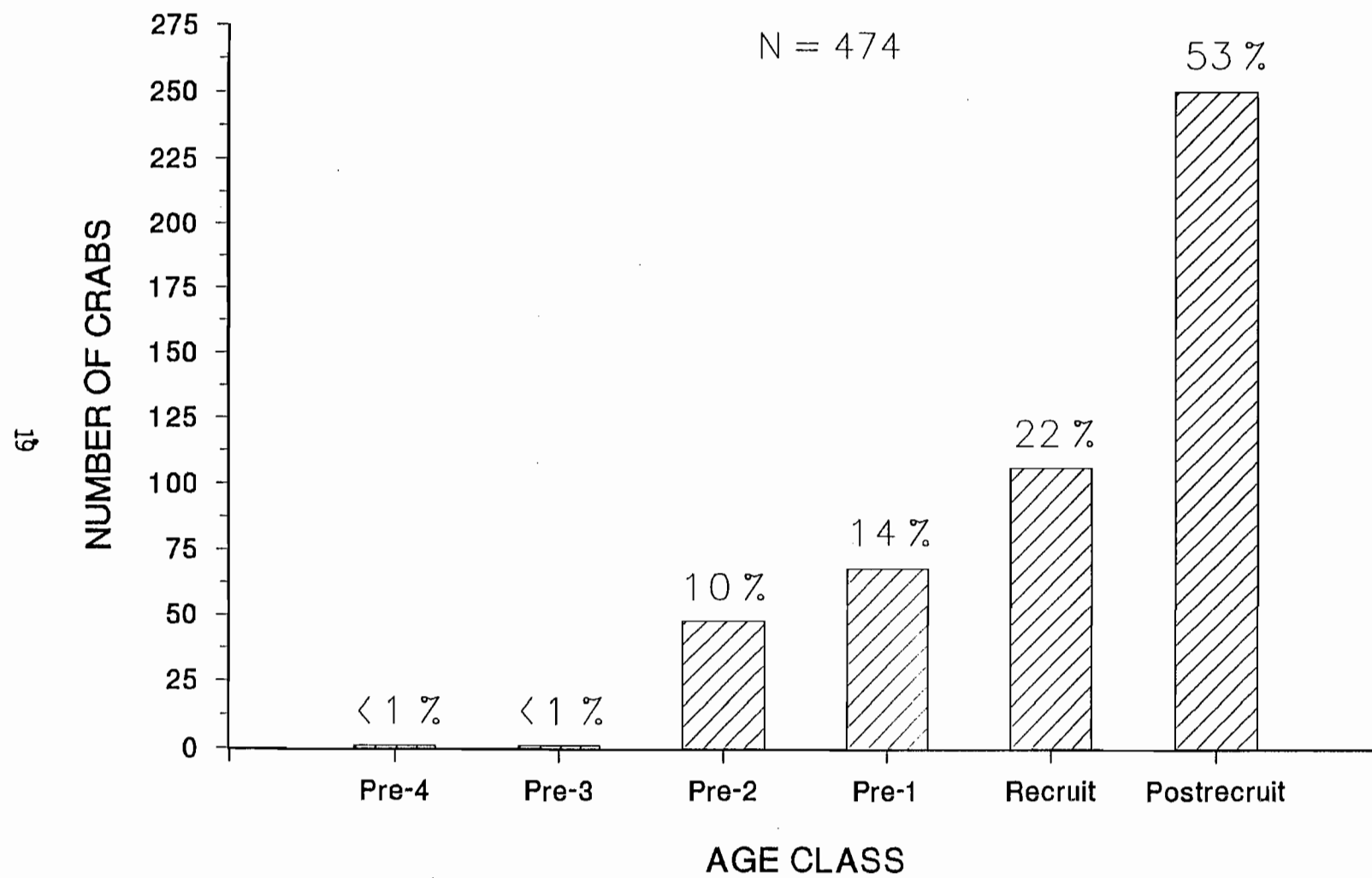


Figure 3. Male king crab catch by age class, Kamishak Distr. index, June 1990.

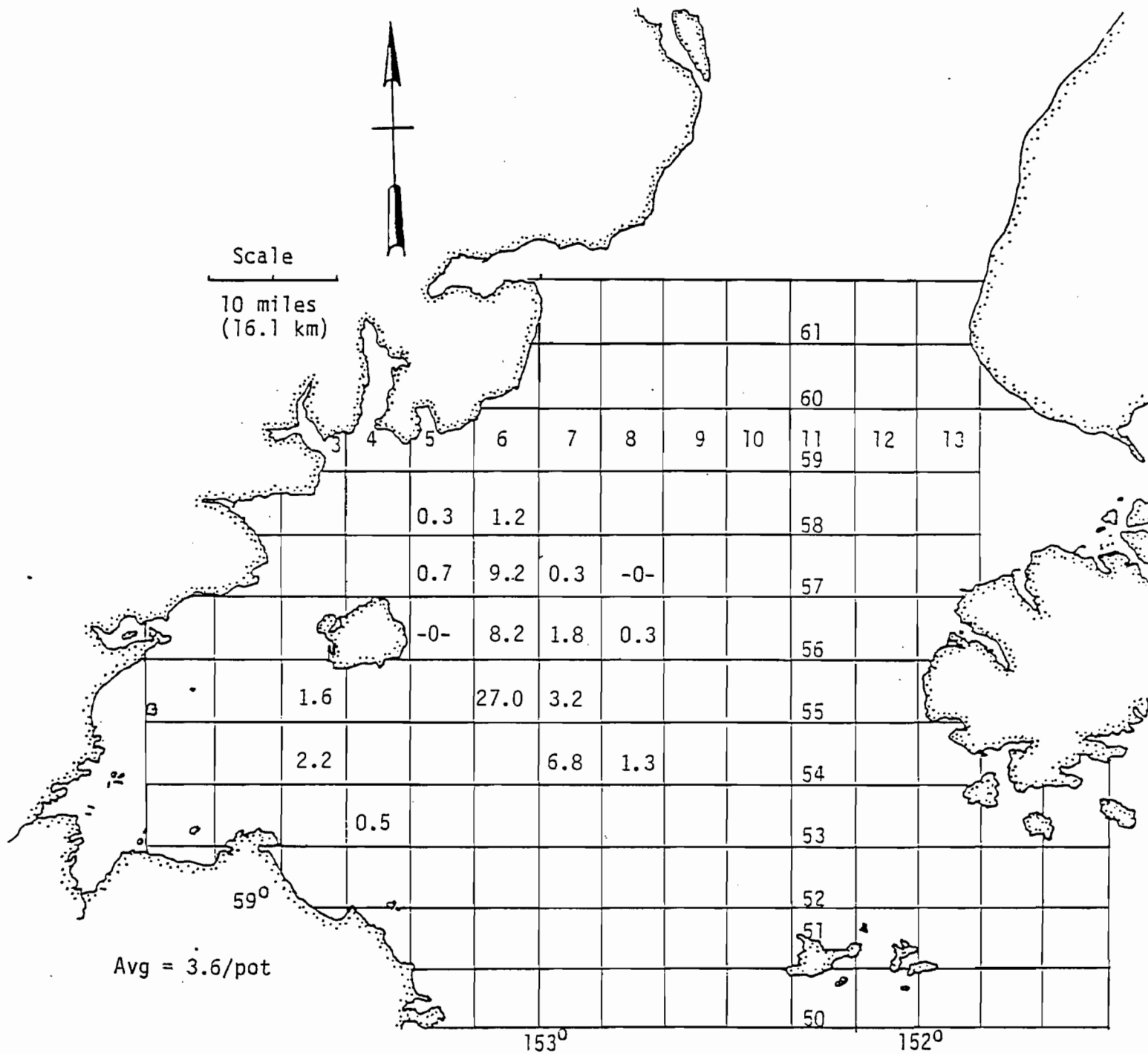


Figure 4. Average catch per pot by station of legal male king crabs, Kamishak District index, June 11-18, 1990.

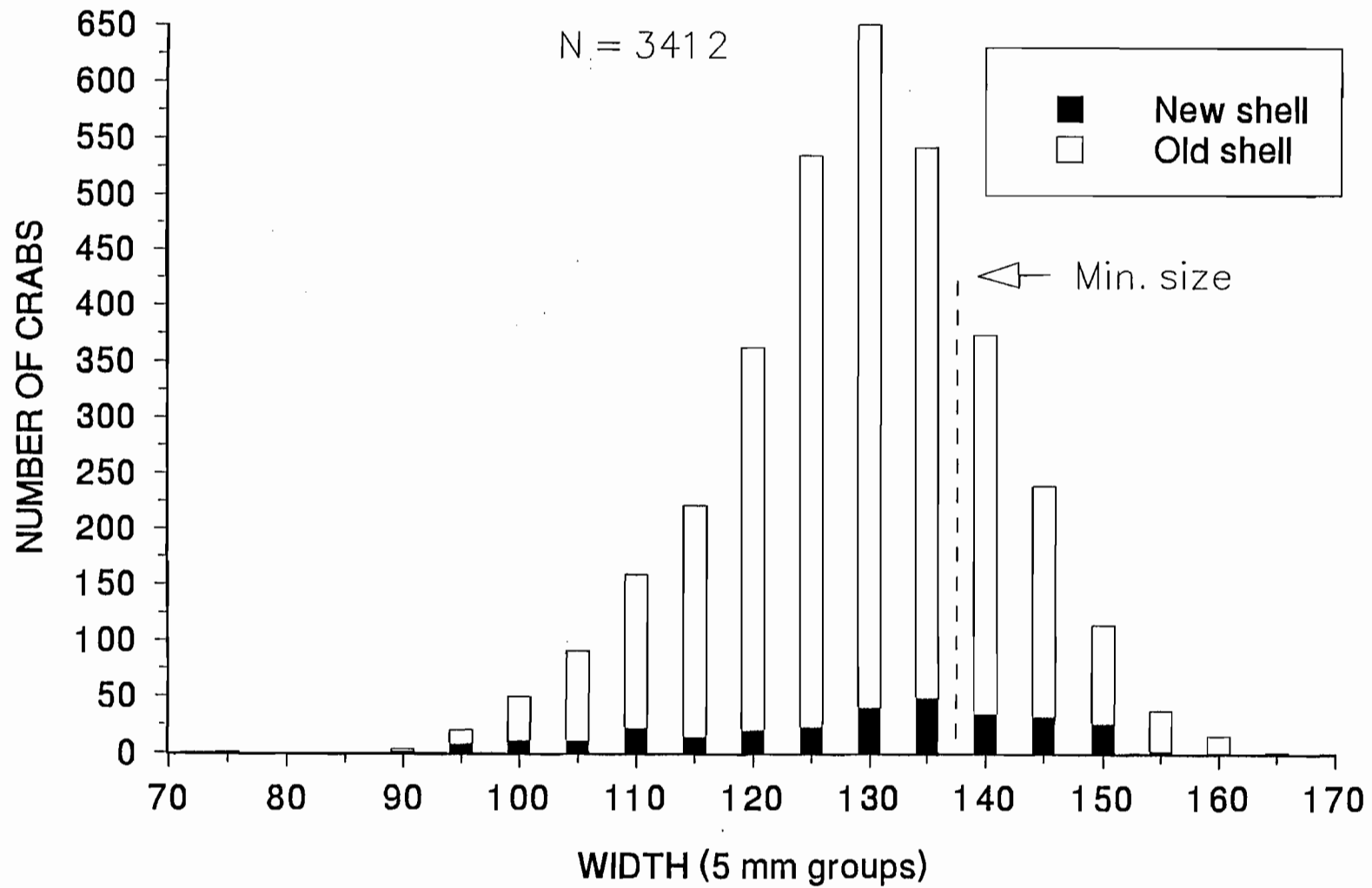


Figure 6. Male Tanner crab size freq., Kamishak Distr. index, June 1990.

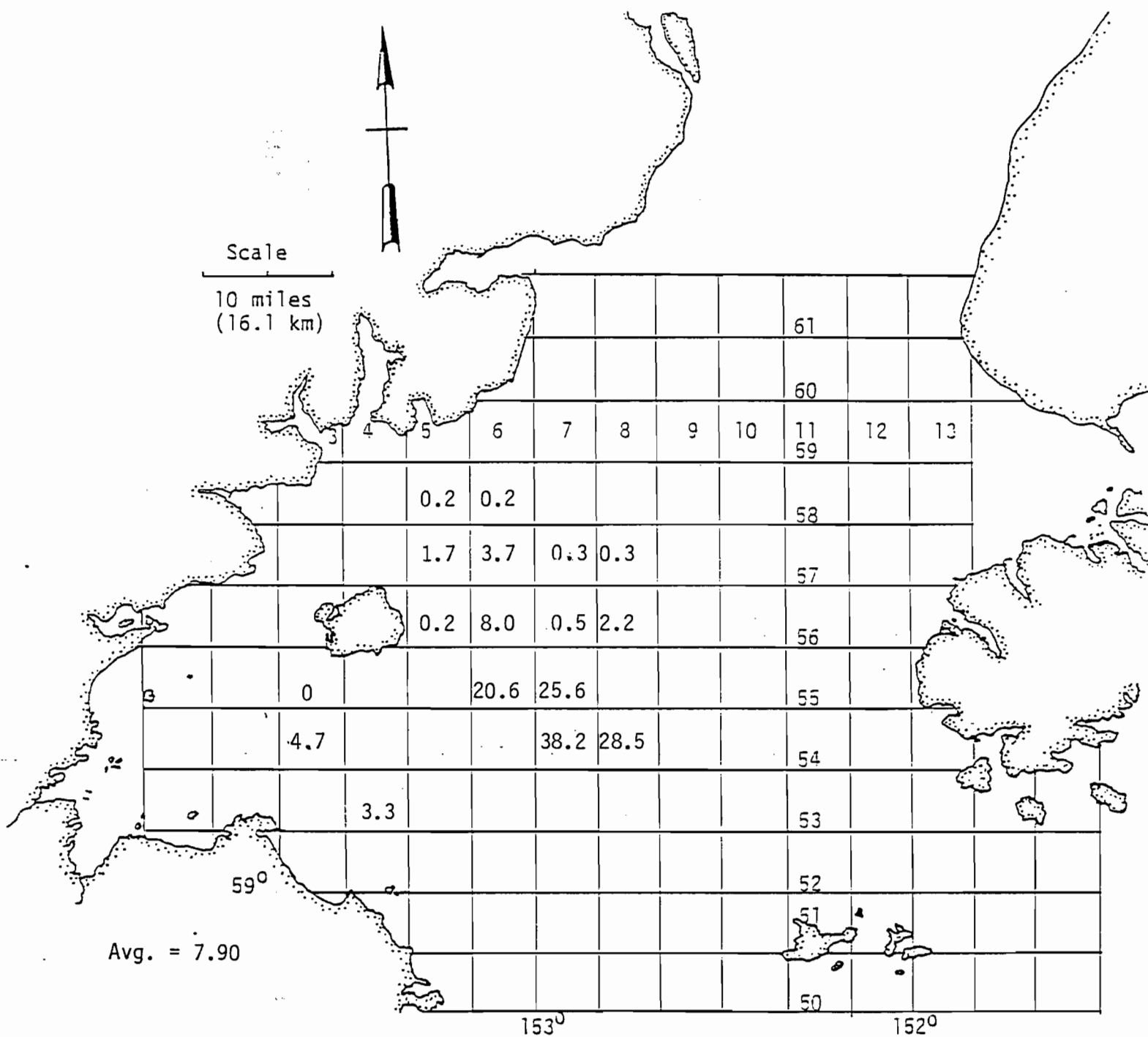


Figure 7. Average catch per pot by station of legal male Tanner crabs, June 1990 survey.

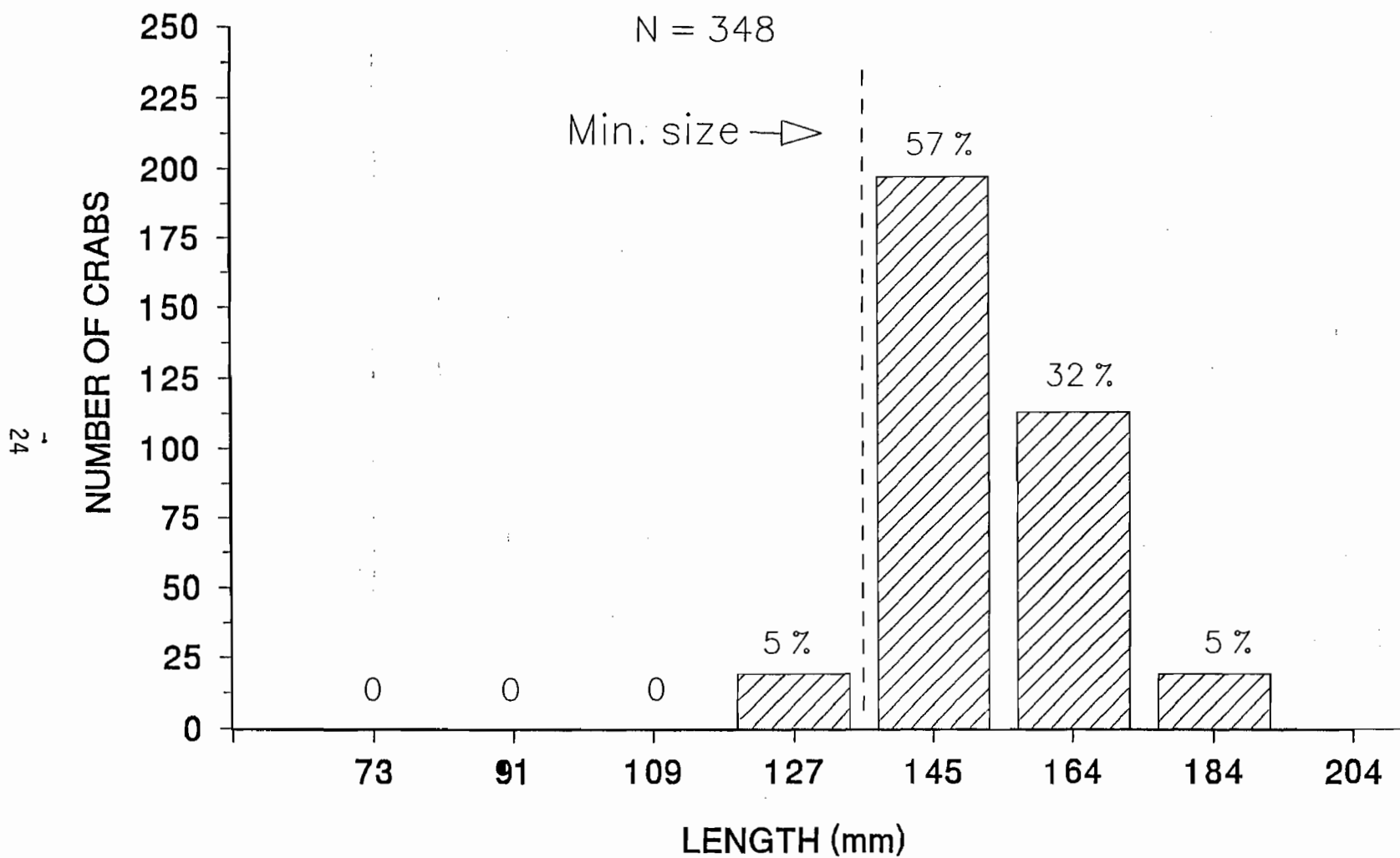


Figure 8. Male king crab catch by size class, Southern Distr. index, June 1990.

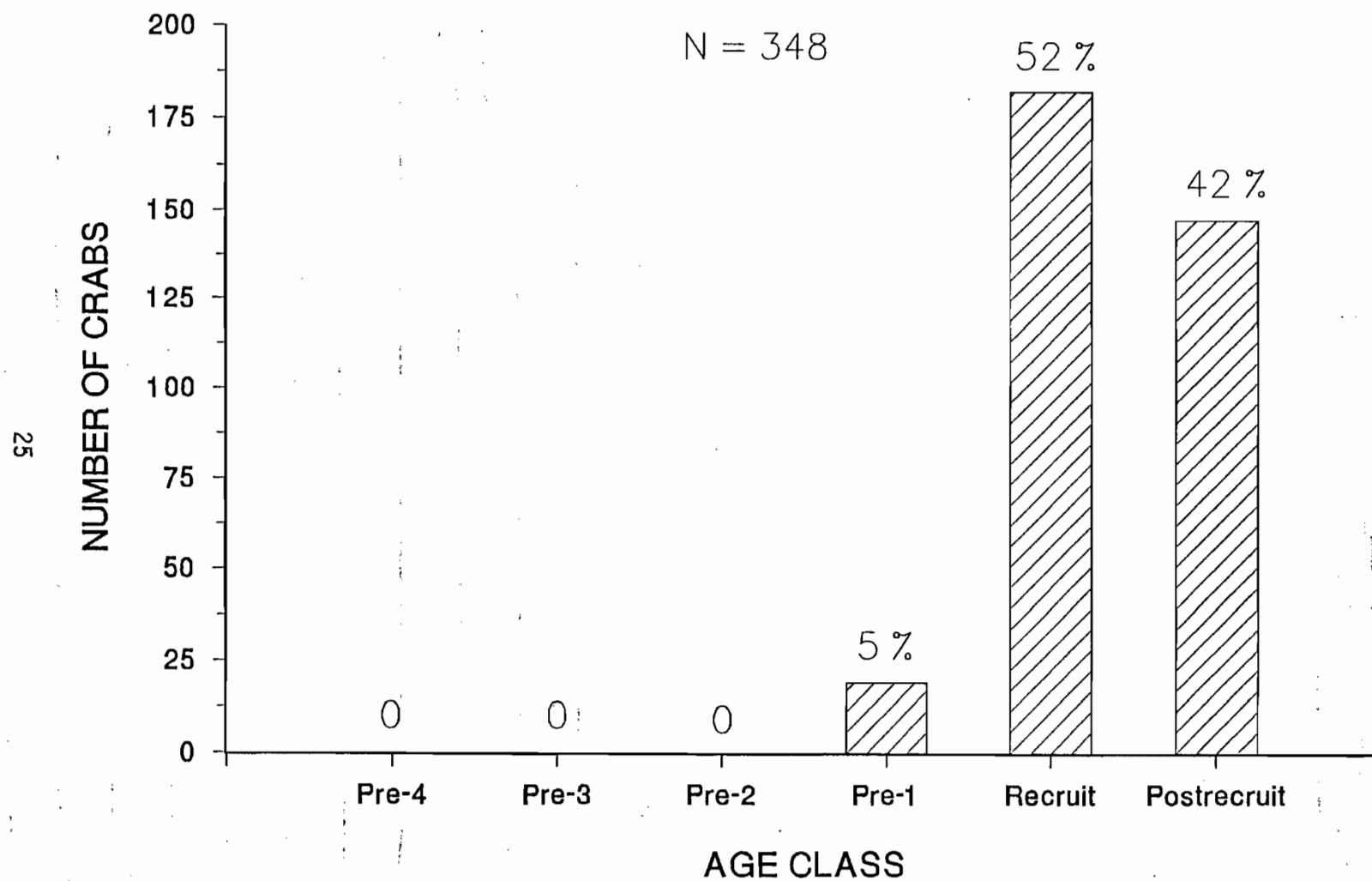
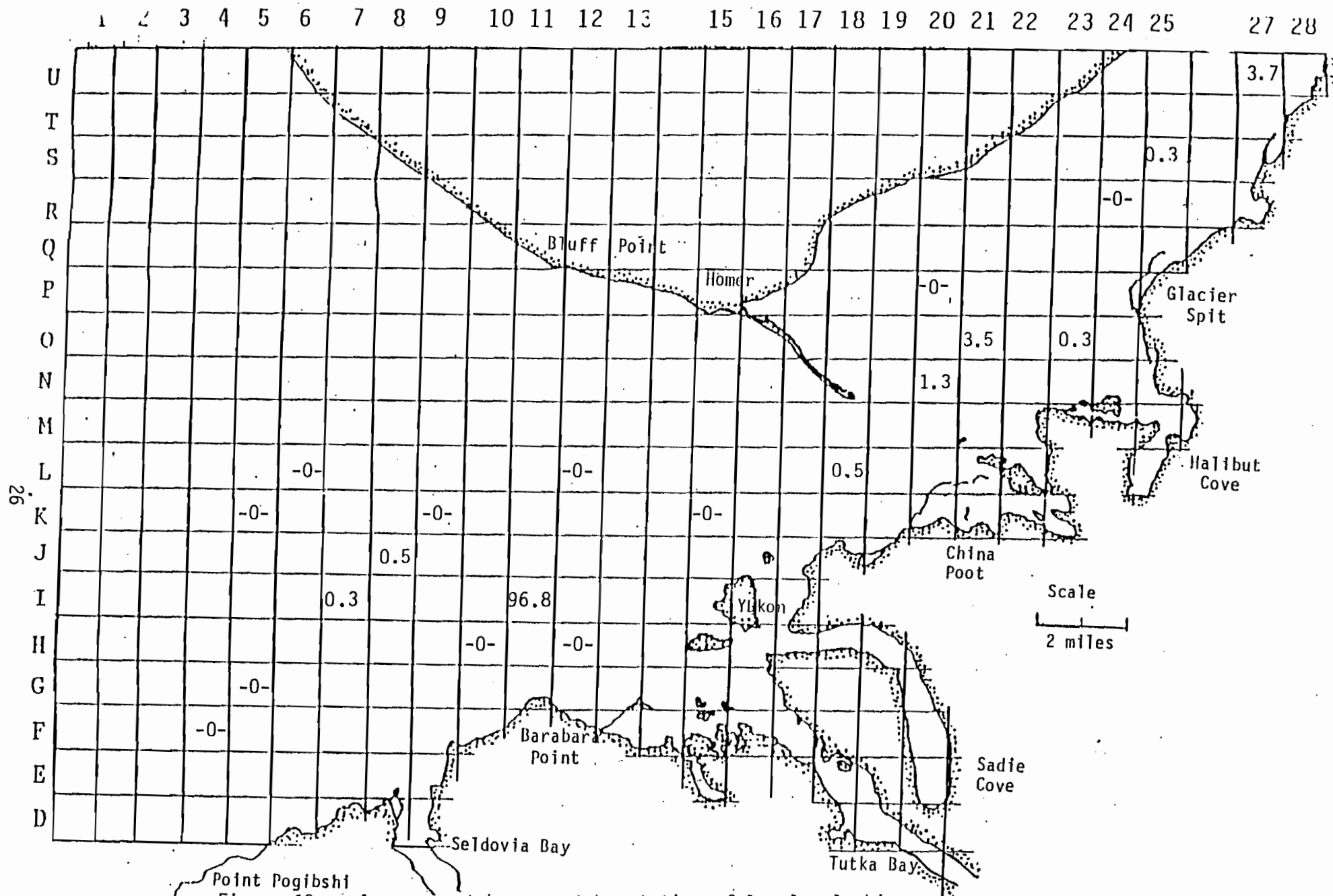


Figure 9. Male king crab catch by age class, Southern Distr. index, June 1990.



Point Pogibshi
Figure 10.

Average catch per pot by station of legal male king crabs,
Southern District index, June 25-29, 1990.

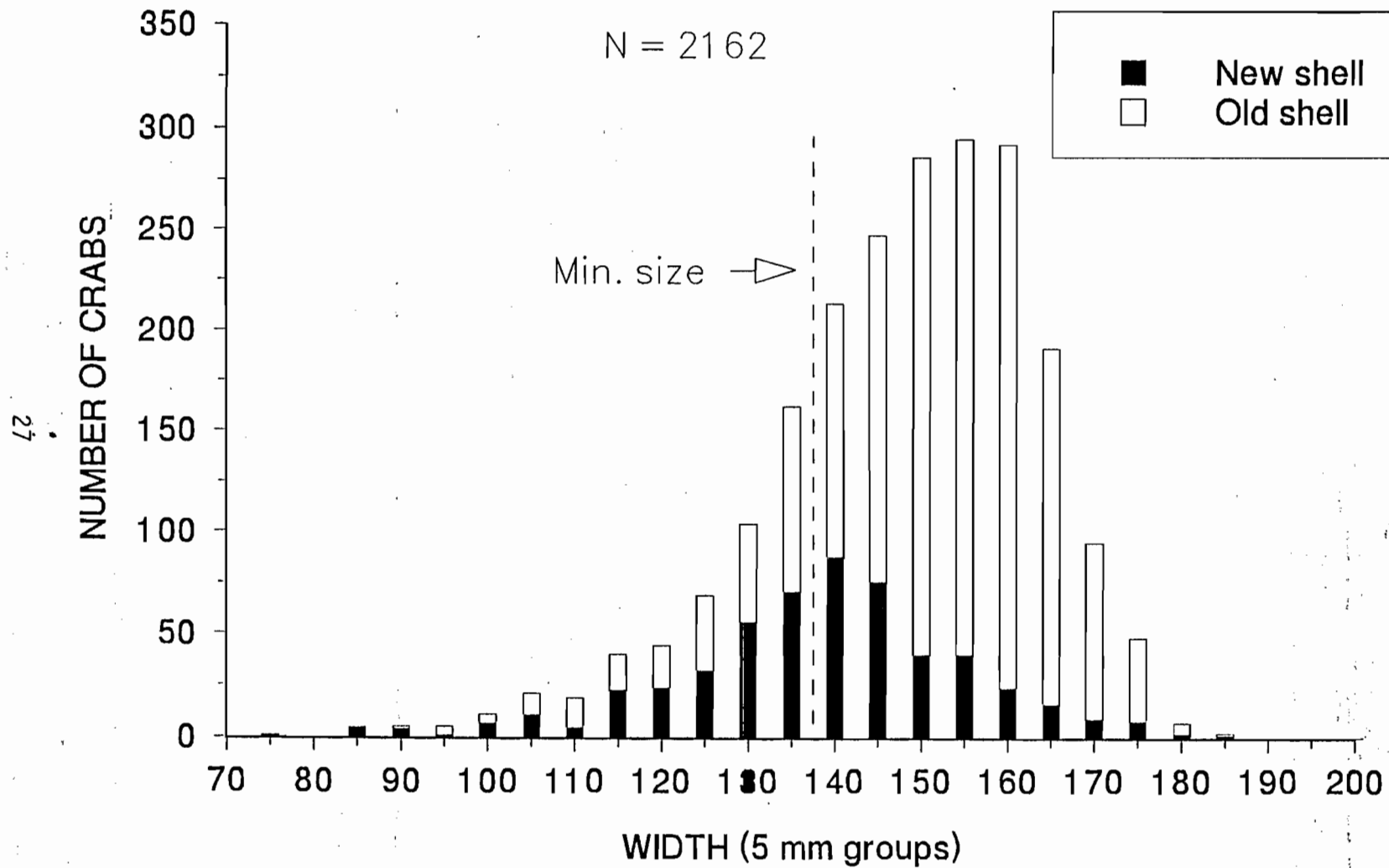


Figure 11. Male Tanner crab size freq., Southern Distr. index, June 1990.

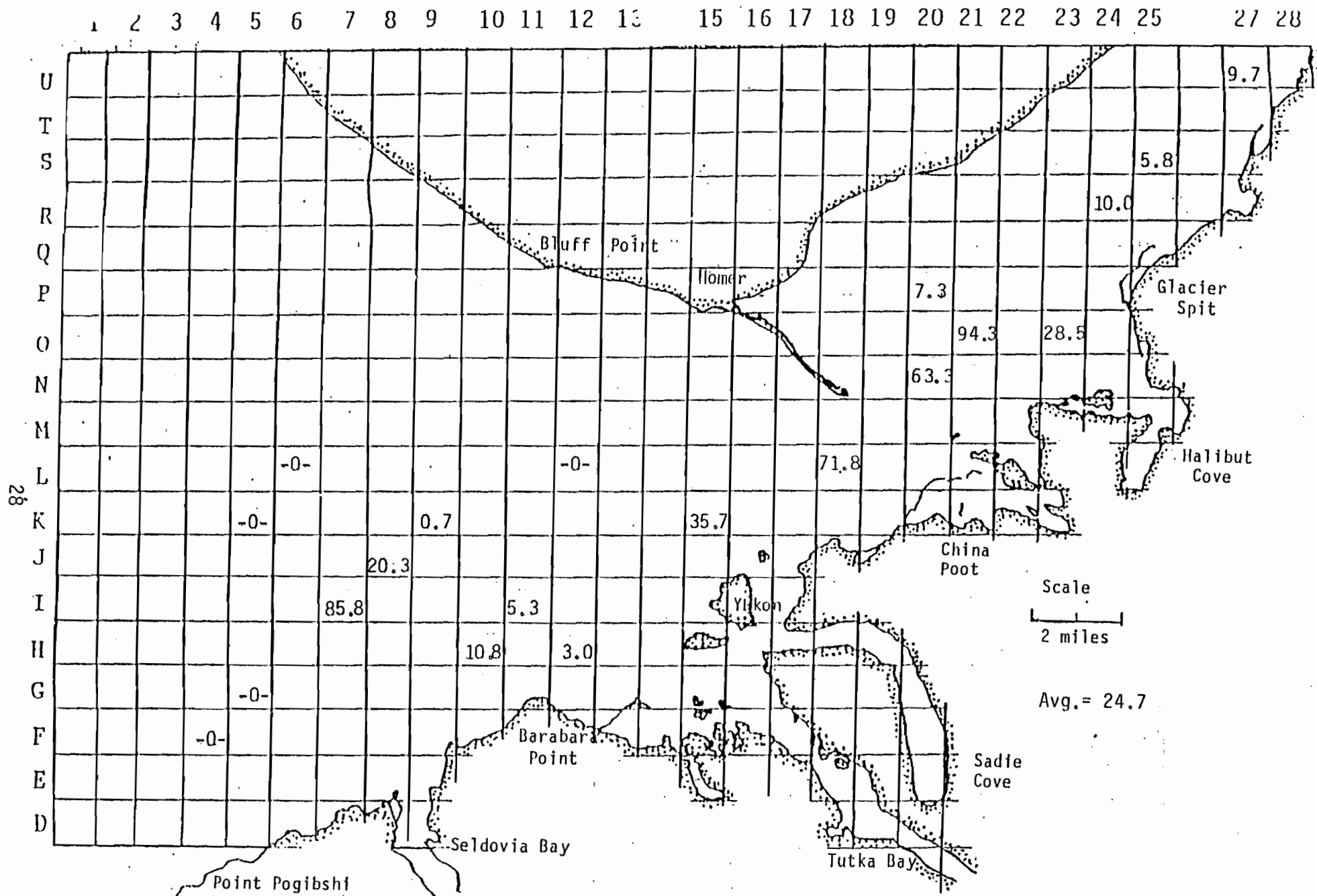


Figure 12. Average catch per pot by station of legal male Tanner crabs, Southern District index, June 25-29, 1990.

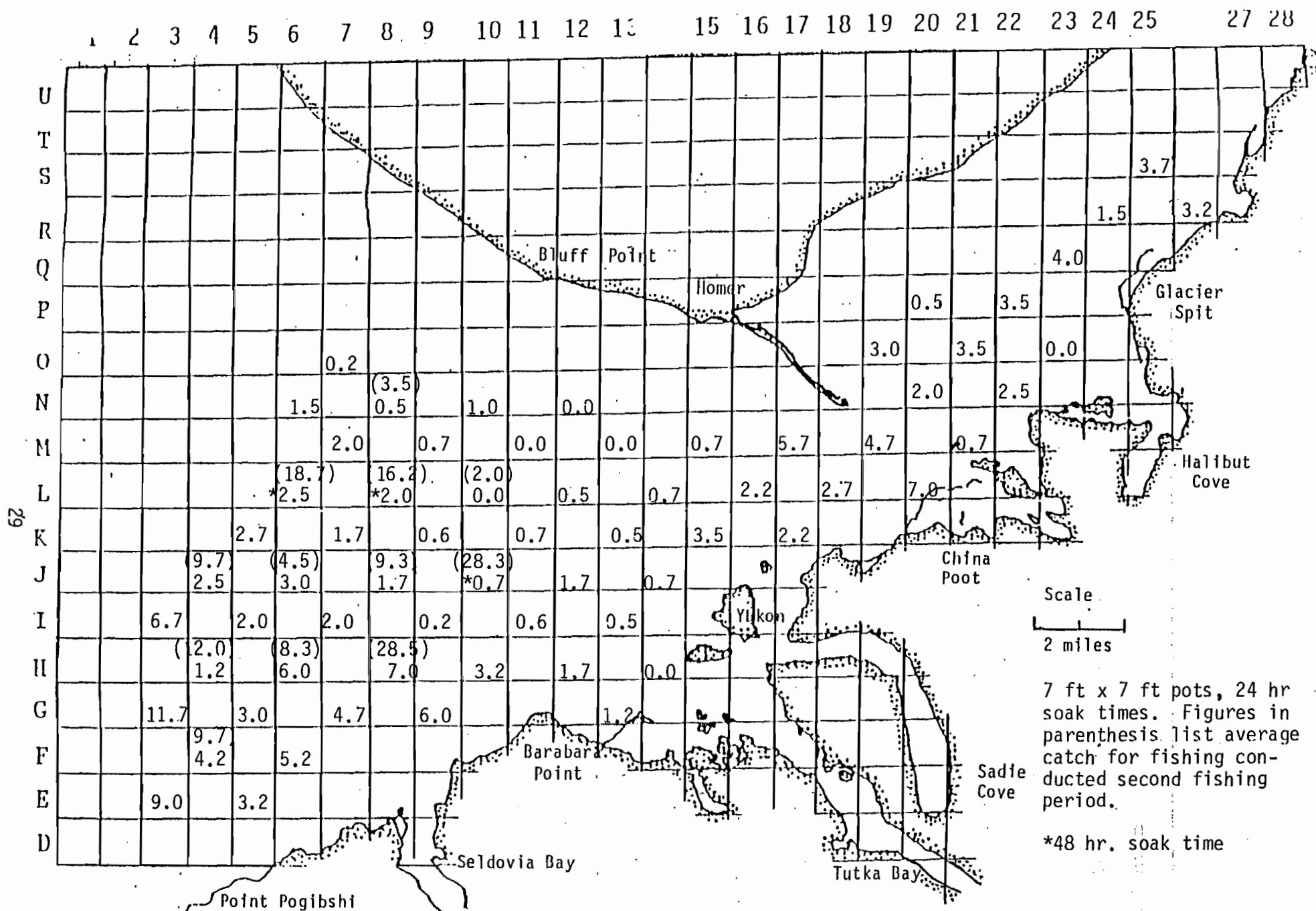


Figure 13. Average catch per pot of legal male king crab captured during regular index fishing 31 May to 7 June 1979 and second index fishing period 18-21 June 1979.

Appendix A. King and Tanner crab size^a and age classes, Cook Inlet Management area.

King crab

Minimum legal size = 145 mm (7 in. width)

Sublegal

Prerecruit 4 = less than 91 mm
Prerecruit 3 = 91 to 108 mm
Prerecruit 2 = 109 to 126 mm
Prerecruit 1 = 127 to 144 mm

Legal

Recruit = 145 to 163 mm (7 to 8 in. width) new shell only
Post recruit = all males greater than 163 mm, and all
skipmolt males between 145 and 164 mm

Tanner crab

Minimum legal size = 140 mm (5.5 in.)

Sublegal

Prerecruit 4 = less than 70 mm
Prerecruit 3 = 70 to 92 mm
Prerecruit 2 = 92 to 114 mm, all males
True prerecruit 2 = 92 to 114 mm, new shell only
Prerecruit 1 = 115 to 139 mm, all males
True prerecruit 1 = 115 to 139 mm, new shell only

Legal

Recruit = 140 to 165 mm, all males
True recruit = 140 to 165 mm, new shell only
Post recruit = all males greater than 165 mm
and all skipmolt males between 140 and 165 mm

^a King crab sizes in length. Tanner crab sizes in width.

EEO STATEMENT

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